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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/626,498  | 07/24/2003  | Masami Amemiya       | 116-031421          | 1980             |
| 28289   | 7590        | 06/10/2005           | EXAMINER            |                  |
| THE WEBB LAW FIRM, P.C.<br>700 KOPPERS BUILDING<br>436 SEVENTH AVENUE<br>PITTSBURGH, PA 15219 |             |                      | SUCHECKI, KRYSZYNA  |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2882                |                  |

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/626,498 | <b>Applicant(s)</b><br>AMEMIYA ET AL. |  |
|                              | <b>Examiner</b><br>Krystyna Suchecki | <b>Art Unit</b><br>2882               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3 and 5-8 is/are allowed.
- 6) ☒ Claim(s) 4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Objections*

1. Claim 4 is objected to because of the following informalities: The previous reference in claim 4 to a "K[alpha]-line" of cadmium has been removed. It is no longer clear what portion of the X-ray is being filtered, since an element can have a large number of lines. Also in claim 4, the second instance of "filter" should be plural. Appropriate correction is required.
2. Claim 4 additionally provides for uses of an X-ray analyzer and an intended use of plural filters. The intended use is not important when determining the patentability of apparatus claims.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertin.
5. Regarding Claim 4, Bertin teaches that it is known to analyze a sample for a particular element by directing primary X-rays from a target in an X-ray tube at the sample to excite secondary X-rays from the sample and detecting the secondary X-rays (p.87, section 3.3.1), wherein an X-ray analyzer comprises plural X-ray filters (up to five, p. 94, item 6) for absorbing energies lower than primary X-rays having energies higher than the K[alpha]-line of the element to be detected so as to irradiate the sample only with the high-energy primary X-rays, the filters being located between the target in the X-ray tube and the sample (section 3.3.1); and an X-ray detector (p. 94, item 13) for detecting secondary X-rays from the sample. To detect a given

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element within a sample, the excitation X-ray beam must be higher than the element's wavelength and able to excite sample electrons (p. 53, Section 1.8.7.4). The use of particular and plural filters at either side of the sample's wavelength allows for the elimination of extraneous lines, such as the line for the source target and precludes coincidence loss (p. 94, Section 6).

6. Bertin does not specifically teach an example for the intended use of cadmium detection such that X-ray energies higher than the K[alpha]-line of cadmium are used to irradiate the sample.

7. However, cadmium is a known toxic element that is routinely tracked to determine its presence in humans and the environment. Tracking cadmium presence assists with the determination of the efficacy of cadmium storage means and the toxicity of the environment.

8. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to detect cadmium using X-ray beams able to excite electrons within the cadmium such that the beams have a wavelength higher than the K[alpha]-line of cadmium. The use of plural filters in the system would allow for the specific detection of cadmium with precluded coincidence loss and no extraneous lines for the purposes of determining the efficacy of cadmium storage and environmental toxicity.

#### ***Response to Arguments***

9. Applicant's arguments with respect to claim 4 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Allowable Subject Matter***

10. Claims 1-3 and 5-8 are allowed.

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11. The following is a statement of reasons for the indication of allowable subject matter: Claim 1 contains allowable subject matter for at least the reason that the prior art of record fails to teach or fairly suggest an X-ray analyzer with first through third filters arranged as claimed so that primary X-rays from a target in an X-ray tube are removed by a first filter, and emerging X-rays are filtered by a second filter, which has emerging X-rays filtered by a third filter as claimed. The three filters cooperate to act on different portions of an X-ray before the X-rays reach a sample.

*Conclusion*

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

13. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krystyna Suchecki whose telephone number is (571) 272-2495.

The examiner can normally be reached on M-F, 9-5.

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15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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Craig E. Church  
Primary Examiner